

North Carolina Department of Transportation

Guidelines for Awarding Construction Manager/General Contractor Projects

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North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

- **Purpose**

Construction Manager/General Contractor (CM/GC) is a project delivery method that allows the Department to select a contractor as an advisor early in the project development process. The Contractor provides constructability reviews, value engineering suggestions, construction estimates, and other construction-related recommendations. CM/GC procurement produces projects with a well-defined scope and reduces the Department's risk through agreement of a Construction Agreed Price in the late design phase.

- **Authority**

The federal surface transportation act "Moving Ahead for Progress in the 21st Century" (MAP-21) was signed into law July 6, 2012. MAP-21 authorized the use of the CM/GC contracting method for delivering Federal-aid projects. Section 1303 of MAP-21 required FHWA to promulgate CM/GC regulations and the Final Rule for CM/GC became effective on January 3, 2017. The 2018-5 North Carolina Session Law {Senate Bill 99} Section 34.13 authorized the Department to create policy and pilot the CM/GC method on up to five projects.

- **Oversight**

A CM/GC Executive Committee, which includes Department upper-level management, will be maintained to guide the evaluation and selection of CM/GC projects. This committee will also be responsible for general oversight of the CM/GC Program, procedures, and performance measures.

- **Project Selection**

CM/GC projects will have construction costs of less than one hundred million dollars (\$100,000,000) as determined by the Department's Latest Preliminary Estimate. Transportation projects from all modes under NC General Statutes 136 could be considered for CM/GC. The appropriate selection of projects for CM/GC is extremely important. Typically, CM/GC projects may be considered if they fall within at least one of the following broad categories:

1. Projects where design and construction need to be expedited for the public good or to capitalize on advanced or specific funding opportunities.
2. Emergency Projects.
3. Projects with complex constructability or traffic phasing issues.
4. Projects affording opportunities for innovation.
5. Unusual projects that do not lend themselves to normal design-bid-build or design-build procedures.

- **Procuring the Designer and Independent Consultant Estimator (ICE)**

In general, the current prequalification and procurement process for Private Consulting Firms will be used to procure designers and independent consultant estimators (ICE) for CM/GC projects. Additional prequalification work codes may be created to qualify the ICE consultants.

- **Procuring the CM/GC Contractor**

CM/GC prequalification solicitation is advertised through a Request for Letters of Interest (RFLOI) through the Professional Services Management Unit under Consultant Advertisements and shown under Design Build Anticipated Advertisements. The CM/GC project procurement is managed through the Priority Projects Team in the Project Management Unit. The Department's

North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

list of prequalified Prime Contractors and existing construction work codes are used to define the prequalification requirements for CM/GC projects. Experience working on contracts with similar scopes of work is required. Previous CM/GC experience is not required.

A short list of two to five CM/GC proposers is selected based the responsive Letters of Interest from the RFLOI. Acceptable contract payment types for Preconstruction Phase Services will be identified in the LOI. A typical compensation model will be cost-plus for task orders.

The LOI short list will be eligible to respond to the CM/GC Request for Qualifications (RFQs). The RFQ will contain detailed requirements of the construction project scope, anticipated preconstruction services and anticipated construction services needed for the specific project. RFQ responses are reviewed and interviews may be conducted with CM/GC RFQ proposers.

A CM/GC fixed-markup percentage is submitted in a separate, sealed envelope. Proposers shall state their proposed CM/GC fixed-markup percentage, identified as a percentage and carried out to two (2) decimal points (e.g., 0.00%). The CM/GC fixed-markup percentage will be applied to the Construction Agreed Price (CAP) provided the service contract's Construction Phase option is exercised.

Qualified, responsive CM/GC proposers are ranked based on demonstrated competency and qualifications without consideration of the submitted CM/GC fixed-markup percentage. The sealed envelopes containing the CM/GC fixed-markup percentage will not be opened until the rankings are known.

The Department will review the proposed fixed-markup percentages from the CM/GC proposers. If the most qualified CM/GC proposer's proposed fixed-markup percentage is not reasonable, the Department reserves the right to negotiate an acceptable fixed-markup percentage prior to executing the Professional Services contract. If Department and the CM/GC proposer cannot successfully reach an agreement on a CM/GC fixed-markup percentage, the Department may terminate negotiations and begin negotiations with the next highest qualified CM/GC proposer. This consecutive negotiation process will continue in ranked order until a successful agreement is reached or the process is terminated.

A Professional Services contract will be prepared utilizing the Department's current process for private consulting firms; however, typical professional engineering design liabilities will not apply.

• **Typical Preconstruction Activities for the CM/GC Contractor**

CM/GC Contractor's preconstruction activities, typically performed at cost plus, may include the activities as listed in Appendix A. Activities anticipated for the specific project are detailed in the RFQ.

North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

- **Award of Construction Contract**

At the design stages identified in the CM/GC Professional Services contract, the selected CM/GC will prepare construction cost proposals including a Construction Agreed Price (CAP) proposal for the construction of the project. The State Contract Officer will compare the CAP proposal with the Engineer's Estimate and the ICE's Estimate to determine its reasonableness. Subject to a successful negotiation with the Department, the CM/GC will be awarded the construction portion of the project.

If an acceptable CAP cannot be reached, the project will be advertised following the Department's normal competitive bidding process and the Preconstruction Phase Service contract will not be extended into the Construction Phase. The CM/GC contractor is excluded from bidding on the CM/GC construction project.

- **CM/GC Construction Subcontracting**

Subcontracting by the General Contractor will be in accordance with Section 108-6 of the Standard Specifications. A modification to this section, such as in special provision "Design Build Provision Division One", may be considered if the project contains a large percentage of specialty work. DBE/MBE/WBE utilization goals will be developed using the Department's existing process after the scope of work is defined and prior to award of a construction contract.

- **CM/GC Contractor, Designer, and ICE Post-Construction Analysis Report**

Independently, the CM/GC Contractor, Designer, and the ICE will prepare a Post-Construction Analysis Report to highlight the anticipated and realized costs, schedule changes, quality enhancements, innovations, and lessons learned. The Post-Construction Analysis will detail the changes in the project attributable to the CM/GC process.

APPENDIX

POTENTIAL CM/GC CONTRACTOR PRECONSTRUCTION ACTIVITIES

Initial Kickoff Activities

Project Kickoff Meeting – Initial meeting(s) with CM/GC Contractor, agency staff, and other stakeholders to define scope, timeline, roles, and expectations of preconstruction activities.

Prepare 30% Cost Model – CM/GC Contractor develops a 30% cost model of the project to submit to the agency if design has advanced to this level.

Design-Related Preconstruction Services

Design Development – CM/GC Contractor will work closely with the designer to develop plans to ensure that the project can be constructed within the budget and schedule constraints and providing insight to improve the constructability and quality of the project.

Design Review Workshop – Participate in a value engineering review of the project and produce a report prioritizing recommendations for the project.

Create a Risk Register – Track and report on risks encountered in the project development and construction process and using the Risk Management Plan monitor and control risk responses.

Innovation Management – Scan market for innovative products, processes, and methods to improve the project. Evaluate innovations for use on the project. Maintain a list of innovations incorporated into the project with comments on anticipated and actual outcomes.

Assist/input to agency/consultant design – CM/GC Contractor will offer ideas/cost information to the designer to be evaluated during the design phase. Ultimately, the designer is still responsible for the design.

Design reviews – Identify errors, omissions, ambiguities, and provide feedback with an eye to improving the constructability and economy of the design submittal.

Constructability reviews – Review tools, methods, techniques, and technology available to improve construction safety, quality or cost.

Operability reviews – Bringing in the agency's operations and maintenance personnel and providing them with an opportunity to make suggestions that will improve the operations and maintenance of the completed projects.

Regulatory reviews – Assist with permit impact drawings considering temporary construction access needs in addition to permanent impacts.

Market surveys for design decisions – Furnish designers with alternative materials or equipment along with current pricing data and availability to assist them in making informed design decisions early in the process to reduce the need to change the design late in the process resulting from budget or schedule considerations.

Verify/take-off quantities – CM/GC Contractor verifies the quantities generated by the designer for the engineer's estimate.

Assistance shaping scope of work – CM/GC Contractor generates priced alternatives from the designer and owner to ensure that the scope of work collates to the constraints dictated by the budget and/or schedule.

Feasibility studies – CM/GC Contractor investigates the feasibility of possible solutions to resolve design issue on the project.

North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

APPENDIX

Cost-Related Preconstruction Services

Develop 60% and 90% Cost Estimates – CM/GC Contractor develops 60% and 90% cost models if needed to submit to the agency.

Price Reconciliation Meeting – CM/GC Contractor will participate in a meeting to review the submitted price estimates or proposals with the agency.

Adjust Cost Model and Pricing – CM/GC Contractor investigates cost model and pricing issues and recommends changes.

Cost engineering reviews – CM/GC Contractor provides real-time cost information on the project at different points in the design process to ensure that the project is staying within budget.

Early award of critical bid packages – CM/GC Contractor determines which design packages should be completed first to ensure that pricing can be locked in on the packages.

Value analysis – Process that takes place during preconstruction where the CM/GC contractor identifies aspects of the design that either do not add value or whose value may be enhanced by changing them in some form or fashion.

Material cost forecasting – CM/GC Contractor utilizes its contacts within the industry to develop estimates of construction material escalation to assist the owner and designer make decisions regarding material selection and early construction packages.

Cost risk analysis – Furnish the agency with information regarding those cost items that have the greatest probability of being exceeded.

Cash flow projections/Cost control – CM/GC Contractor provides estimate of construction carrying costs to aid the owner in determining projected cash flow decisions.

Shape the project scope to meet budget – CM/GC Contractor recommends scope modifications to assist in managing the project budget.

Schedule-Related Preconstruction Services

Develop and Submit Schedule Estimates – CM/GC Contractor submits an initial estimate of the project schedule to the agency.

Prepare and manage project schedules – CM/GC Contractor prepares and manages schedules throughout the design phase to ensure that dates will be met, and notifies the owner when issues arise.

Provide schedule change management – CM/GC Contractor tracks schedule changes throughout the development and construction of the project determining the reason for schedule adjustment.

Validate agency/consultant schedules – CM/GC Contractor evaluates if the current scope of work can be executed within the constraints of the schedule.

Develop sequence of design work – CM/GC Contractor sequences the design work to mirror the construction work, so that early work packages can be developed.

Construction phasing – CM/GC Contractor develops a construction phasing plan to facilitate construction progress and ensure maintenance of traffic.

North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

APPENDIX

Administrative-Related Preconstruction Services

Coordinate with third-party stakeholders – CM/GC Contractor communicates with third parties involved in the project including but not limited to utilities, railroads, and the general public.

Attend public meetings – CM/GC Contractor can organize and attend public meetings to answer questions from the public about the construction of the project.

Subcontractor bid packaging – CM/GC Contractor coordinates the design work packaging to directly correlate with subcontractor work packages so that early packages can be easily bid out and awarded.

Selecting subcontractors – CM/GC Contractor identifies potential subcontractors and promotes the Department’s subcontractor support resources in order to encourage competitive subcontractor bid packages.

Assist in right-of-way acquisition – CM/GC Contractor assists the designer in identifying options for right-of-way acquisitions by providing means and methods input. The primary purpose is to minimize the amount of right-of-way actions that must be undertaken.

Assist in permitting actions – CM/GC Contractor is empowered to meet with resource agencies and develop permit applications with assistance from the designer.

Study labor availability/conditions – CM/GC Contractor furnishes advice during design with regard to the availability of specialty trade subcontractors and the impact of that availability on project budget and schedule constraints.

Utilization goal recommendations – Provide input to the agency for contract utilization goals.

Coordinate site visits for subcontractors – CM/GC Contractor coordinates site visits for subcontractors to facilitate the subcontractor procurement process.

Preconstruction Related Field Work

Utility Relocation

Potholing

Preliminary Soil and Geotech Studies

Right of Way Demolition

Preliminary Surveying

APPENDIX

CM/GC FIXED-MARKUP AND OVERHEAD DEFINITIONS

Fixed-Markup Definition and CAP

The CM/GC Contractor shall propose a fixed-markup for the Work expressed as a percentage of the Total Construction Cost on the form provided. The proposed CM/GC fixed-markup percentage is carried out to two (2) decimal points (e.g., 0.00%) and will be applied to the Construction Agreed Price (CAP) bid during all Construction Phase Services. The CM/GC fixed-markup percentage is submitted in a separate, sealed envelope.

The fixed-markup percentage will include the CM/GC Contractor's profit plus the portion of home office overhead or general and administrative expenses (G&A) allocated to the Project. Home office overhead (G&A) is defined as all auditable costs that are allocated to all of the Contractor's ongoing projects, including insurance that is maintained by the Contractor as a general cost of doing business, excluding insurance that is project specific or covered under labor and equipment costs. The fixed-markup percentage proposed in the RFQ will be used in the project cost estimates, CAP bidding for all work packages, and all change orders.

The profit component of the fixed-markup is to include any bonuses and incentives but excludes all costs associated with direct Project construction activities, including but not limited to, risk or contingency.

The fixed-markup shall not include any field indirect costs or direct costs of the Project. The fixed-fee percentage shall be applied to the total construction cost, and the result shall be the Construction Agreed Price (CAP). The CAP shall be used as the "bid" to be submitted to the Department for the construction of the project.

Field Indirect Costs (General Conditions of Work)

The list below states the categories of field indirect costs that are acceptable to the Department and shall be included in the Cost of the Work, and not included as part of the G&A portion of the CM/GC fixed-markup percentage submitted in response to the RFQ.

- Job Supervision and Overhead: Wages including benefits, payroll insurance and taxes for onsite management, supervision, engineers, safety personnel, quality control staff, administration staff, and other staff as approved by the Department.
- Survey/GPS: Cost of construction survey and GPS work including both CM/GC Contractor-hired and outside service.
- Site Office Expense: Ownership or rental of building, maintenance, removal, utilities, office and engineering expendables, furniture, computers and infrastructure, photographs.

North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

APPENDIX

- Insurance and Taxes: Insurance costs excluding those included in direct labor or equipment costs and project specific insurance costs such as railroad insurance. Taxes excluding those included in direct labor or equipment costs. Sales tax should be included with the applicable item taxed.
- Temporary Buildings: Cost of ownership or rental, set up, maintenance and removal of such buildings as owner's office (if not a direct bid item), warehouses, first aid building, and other miscellaneous.
- Personnel Expense: Small tools and supplies, safety expendables, drug screen testing, training, physicals, and hiring expense. Include any per-diem costs for craft or indirect personnel.
- Project Utilities: Site utilities such as temporary electric, water, and sanitary.
- Mobile Equipment: Overhead vehicles, maintenance equipment and personnel (if not in Equipment Operating Expense), and general service equipment and personnel (such as flatbeds and forklifts if not in direct cost).
- Mobilization: Cost of transportation of equipment and other items for move in, move out, set up, and take down. Include cost of personnel moves and related expense.
- Construction Plant: Include site fences, parking areas, material yards, temporary access, and other such special construction not included in direct costs. Haul road construction and maintenance to be included in direct costs.
- Quality Control: Cost of QC labor, equipment, and supplies and outside services and CM/GC Contractor-hired personnel with site overhead wages.
- Bonds: Include cost of payment and performance bond or other guaranties as specified or allowed. Cost of subcontract or material bond shall also be included here.
- Escalation: Estimated cost of Items for which firm pricing cannot be obtained. Includes increases in craft and field indirect wage rates and fringe benefits whether by agreement or estimated.

When pricing the work for cost proposals or CAPs, field indirect costs will be broken out separately and not spread over the cost of the work.

North Carolina Department of Transportation
Guidelines for Awarding CM/GC Projects

APPENDIX

Allowable Construction Costs for Direct and Field Indirect Costs

Definitions of some of the items of direct and field indirect costs are set forth below and shall not be included in the CM/GC fixed-markup percentage submitted in response to the RFQ:

- **Labor:** Includes wages and add-ons including overtime, vacation pay, and all fringe payments such as health and welfare, pensions, and any other that may be included in union agreement or as paid to both craft and staff employees. Payroll insurance including Worker's Compensation and General Liability if based on labor amounts. Payroll taxes including FICA and State and Federal unemployment.
- **Permanent Materials:** Includes the cost of materials incorporated into the Work. To include estimated loss, waste, and non-pay overruns. Sales tax and any shipping for these materials will be a part of this category.
- **Construction Expendable Materials:** Includes non-permanent materials, temporary facilities, small tools, formwork, temporary construction, office supplies, services, and material-related insurance and taxes.
- **Equipment Operating Expense and Ownership:** Includes rental or ownership charge of both company-owned and outside rentals, equipment-related insurance, sales tax on any rentals, repair parts, tires and tracks, CM/GC Contractor's repair labor, services and fuel, oil and grease.
- **Subcontract:** Cost of Items of work subcontracted including contracted trucking.